

Module Code	Pre-requisite Module codes	Co-Requisite Modules code(s)	ISCED Code	Subject Code	ECTS Credits	NFQ Level (CPD)#
CMPU2006					10	6
Module Title	Database Systems					

Database Systems

School Responsible:	School of Computing
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Module Overview:

This module provides the student with a comprehensive introduction to conceptual data modelling for database design, sound understanding of the relational model, and practical knowledge of querying SQL databases and expressing relational schemata in SQL.

Learning Outcomes (LO): (to be numbered)

For a 5ECTS module a range of 4-10 LOs is recommended

On Completion of this module, the learner will be able to

1	Understand the notion of persistent file storage and be able to describe techniques for data organisation.
2	Describe and justify the rationale for relational database management systems.
3	Demonstrate an understanding of the desirable features of a database management system and how they are achieved.
4	Identify and distinguish between data and meta-data, and the concepts of keys.
5	Design a data model suited to a business application and implement it in a relational database.
6	Define tables and views with appropriate constraints to ensure data integrity and relational integrity.
7	Manipulate the data in a relational database using DDL and DML aspects of SQL.
8	Apply knowledge gained to real-world problems.

Indicative Syllabus:

The module content will include the following topics. Material may be added to or deleted from this list over the lifetime of the module to reflect the changing nature of the relevant technologies.

- Disk Storage, Basic File Structures, and Hashing
- Databases and Database Users

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- Database System Concepts and Architecture
- The Relational Data Model and Relational Database Constraints
- SQL
- Data Modelling Using the Entity-Relationship (ER) Model
- The Enhanced Entity-Relationship (EER) Model
- Relational Database Design by ER and EER-to-Relational Mapping
- Practical Database Design Methodology
- Dependencies and Normalization

Learning and Teaching Methods:

The course delivery involves a combination of lectures and labs which may incorporate the use of blended learning techniques as appropriate throughout the delivery.

Total Teaching Contact Hours	39
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Total Self-Directed Learning Hours	148
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Module Delivery Duration:

This module is delivered over one semester

Assessment

Assessment Type	Weighting (%)	LO Assessment (No.)
Final Exam	70	1-8
In class examination	30	4, 5, 6, 7, 8
Module Specific Assessment Arrangements (if applicable)		
(a) Derogations from General Assessment Regulations		
(b) Module Assessment Thresholds		
(c) Special Repeat Assessment Arrangements		

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Essential Reading: (author, date, title, publisher)

Connolly, Thomas M. and Begg, Carolyn, Database Systems: A practical approach to design, implementation and management; Pearson Education; 6th edition; 2015.

Web references, journals and other

Oracle Technology Network

<http://www.oracle.com/technetwork/index.html>

Version No:		Amended By	
Commencement Date		Associated Programme Codes	

Modules that are to be offered as Stand-Alone CPD Programmes must have an NFQ level assigned

*Details of the assessment schedule should be contained in the student handbook for the programme stage.

Date of Academic Council approval

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